0078363

SAF-RC-057
118-K-1 Burial Grounds – Other Liquid Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 7/1/08
INITIAL/DATE

COMMENTS:

SDG K1250 **SAF-RC-057**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 118-K-1

RECEIVED
JUL 07 2008
EDMC

LIONVILLE LABORATORY INC.

1 July 2008

RECEIVED JUN 2008

Joan Kessner
WC-Hanford
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0806L248
SDG #	K1250
SAF #	RC-057
Date Received	6/5/08
# Samples	1
Matrix	OTHER LIQUID
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-057 K1250

RECEIVED JUN 2008

DATE RECEIVED: 06/05/08 LVL LOT # :0806L248

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16W87						
SILVER, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
SILVER, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
SILVER, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
ALUMINUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/12/08
ALUMINUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/12/08
ALUMINUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/12/08
ARSENIC, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
ARSENIC, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
ARSENIC, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
BARIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
BARIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
BARIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
BERYLLIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
BERYLLIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
BERYLLIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
CALCIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
CALCIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
CALCIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
CADMIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
CADMIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
CADMIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
COBALT, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
COBALT, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
COBALT, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
CHROMIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
CHROMIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
CHROMIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
COPPER, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
COPPER, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
COPPER, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
IRON, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
IRON, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
IRON, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
POTASSIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/12/08
POTASSIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-057

DATE RECEIVED: 06/05/08 LVL LOT # :0806L248

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/12/08
MAGNESIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
MAGNESIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
MAGNESIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
MANGANESE, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
MANGANESE, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
MANGANESE, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
SODIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/12/08
SODIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/12/08
SODIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/12/08
NICKEL, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
NICKEL, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
NICKEL, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
LEAD, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
LEAD, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
LEAD, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
ANTIMONY, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
ANTIMONY, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
ANTIMONY, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
SELENIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
SELENIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
SELENIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
THALLIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
THALLIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
THALLIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
VANADIUM, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
VANADIUM, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
VANADIUM, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08
ZINC, TOTAL	001	W	08L0225	05/28/08	06/09/08	06/10/08
ZINC, TOTAL	001 REP	W	08L0225	05/28/08	06/09/08	06/10/08
ZINC, TOTAL	001 MS	W	08L0225	05/28/08	06/09/08	06/10/08

LAB QC:

SILVER LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
SILVER, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
ALUMINUM LABORTORY	LC1 BS	W	08L0225	N/A	06/09/08	06/12/08
ALUMINUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-057

DATE RECEIVED: 06/05/08 LVL LOT # :0806L248

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
ARSENIC, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
BARIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
BARIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
BERYLLIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
BERYLLIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
CALCIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
CALCIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
CADMIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
CADMIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
COBALT LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
COBALT, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
CHROMIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
CHROMIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
COPPER LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
COPPER, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
IRON LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
IRON, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
POTASSIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/12/08
POTASSIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/12/08
MAGNESIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
MAGNESIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
MANGANESE LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
MANGANESE, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
SODIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/12/08
SODIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/12/08
NICKEL LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
NICKEL, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
LEAD LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
LEAD, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
ANTIMONY LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
ANTIMONY, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
SELENIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
SELENIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
THALLIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
THALLIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08
VANADIUM LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
VANADIUM, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-057

DATE RECEIVED: 06/05/08 LVL LOT # :0806L248

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC LABORATORY	LC1 BS	W	08L0225	N/A	06/09/08	06/10/08
ZINC, TOTAL	MB1	W	08L0225	N/A	06/09/08	06/10/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-057
LVL#: 0806L248
SDG/SAF#: /RC-057 K1250

W.O.#: 11343-606-001-9999-00
Date Received: 06-05-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

1. This narrative covers the analysis of 1 water sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.

   The sample was prepped at a 50-fold dilution for ICP metals due to limited sample volume.

   The sample was rerun for Aluminum, Potassium, and Sodium, on a different instrument. Potassium, and Sodium were rerun in file PS0612A due to CCVs that were outside the 90-110% control limits. Aluminum was also rerun in file PS0612A due to sample matrix.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits for all data contained within this report.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), the sample concentrations were greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

7. All ICP Interference Check Standards were within control limits.

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 18 pages.

LIONVILLE LABORATORY INC.

9. The matrix spike (MS) recoveries for all analytes were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

11. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

12. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/18/08
Date

alm/m06-248

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within t

Lot#: 0806L248

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: ✓3005A __3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	✓6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	✓6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	✓6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	✓6010B		__200.7				__99
Manganese	✓6010B		__200.7				__99
Mercury	__7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	✓6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010B		__200.7				__99
Zinc	✓6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/12/08

CLIENT: TNU-HANFORD RC-057 LVL LOT #: 0806L248

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16W87	Silver, Total	50.0	u	UG/L	50.0	1.0
		Aluminum, Total	2000	u	UG/L	2000	1.0
		Arsenic, Total	250	u	UG/L	250	1.0
		Barium, Total	135		UG/L	50.0	1.0
		Beryllium, Total	25.0	u	UG/L	25.0	1.0
		Calcium, Total	46700		UG/L	2000	1.0
		Cadmium, Total	25.0	u	UG/L	25.0	1.0
		Cobalt, Total	100	u	UG/L	100	1.0
		Chromium, Total	1560		UG/L	100	1.0
		Copper, Total	100	u	UG/L	100	1.0
		Iron, Total	7240		UG/L	2250	1.0
		Potassium, Total	141000		UG/L	24600	1.0
		Magnesium, Total	14100		UG/L	1250	1.0
		Manganese, Total	91.0		UG/L	20.0	1.0
		Sodium, Total	45700		UG/L	1000	1.0
		Nickel, Total	100	u	UG/L	100	1.0
		Lead, Total	150	u	UG/L	150	1.0
		Antimony, Total	150	u	UG/L	150	1.0
		Selenium, Total	300	u	UG/L	300	1.0
		Thallium, Total	300	u	UG/L	300	1.0
		Vanadium, Total	70.0	u	UG/L	70.0	1.0
		Zinc, Total	726		UG/L	300	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/12/08

CLIENT: TNU-HANFORD RC-057 LVL LOT #: 0806L248

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0225-MB1	Silver, Total	1.0	u	UG/L	1.0	1.0
		Aluminum, Total	50.5		UG/L	40.0	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Barium, Total	1.5		UG/L	1.0	1.0
		Beryllium, Total	0.50	u	UG/L	0.50	1.0
		Calcium, Total	92.5		UG/L	40.0	1.0
		Cadmium, Total	0.50	u	UG/L	0.50	1.0
		Cobalt, Total	2.0	u	UG/L	2.0	1.0
		Chromium, Total	2.0	u	UG/L	2.0	1.0
		Copper, Total	2.0	u	UG/L	2.0	1.0
		Iron, Total	45.0	u	UG/L	45.0	1.0
		Potassium, Total	493	u	UG/L	493	1.0
		Magnesium, Total	65.7		UG/L	25.0	1.0
		Manganese, Total	0.40	u	UG/L	0.40	1.0
		Sodium, Total	232		UG/L	20.0	1.0
		Nickel, Total	2.0	u	UG/L	2.0	1.0
		Lead, Total	3.0	u	UG/L	3.0	1.0
		Antimony, Total	3.0	u	UG/L	3.0	1.0
		Selenium, Total	6.0	u	UG/L	6.0	1.0
		Thallium, Total	6.0	u	UG/L	6.0	1.0
		Vanadium, Total	1.4	u	UG/L	1.4	1.0
		Zinc, Total	6.0	u	UG/L	6.0	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/12/08

CLIENT: TNU-HANFORD RC-057 LVL LOT #: 0806L248

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16W87	Silver, Total	2370	50.0	u	2500	94.6	1.0
		Aluminum, Total	98900	2000	u	100000	98.9	1.0
		Arsenic, Total	99100	250	u	100000	99.1	1.0
		Barium, Total	96400	135		100000	96.2	1.0
		Beryllium, Total	2470	25.0	u	2500	98.7	1.0
		Calcium, Total	1320000	46700		250000	101.8	1.0
		Cadmium, Total	2500	25.0	u	2500	100	1.0
		Cobalt, Total	24600	100	u	25000	98.6	1.0
		Chromium, Total	10900	1560		10000	93.1	1.0
		Copper, Total	12000	100	u	12500	96.3	1.0
		Iron, Total	51900	7240		50000	89.2	1.0
		Potassium, Total	1360000	141000		250000	97.6	1.0
		Magnesium, Total	1250000	14100		250000	98.6	1.0
		Manganese, Total	25000	91.0		25000	99.5	1.0
		Sodium, Total	1280000	45700		250000	98.5	1.0
		Nickel, Total	25600	100	u	25000	102.6	1.0
		Lead, Total	24800	150	u	25000	99.3	1.0
		Antimony, Total	24300	150	u	25000	97.3	1.0
		Selenium, Total	87500	300	u	100000	87.5	1.0
		Thallium, Total	96400	300	u	100000	96.4	1.0
		Vanadium, Total	23900	70.0	u	25000	95.6	1.0
		Zinc, Total	25000	726		25000	97.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/12/08

CLIENT: TNU-HANFORD RC-057 LVL LOT #: 0806L248

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		RPD	DILUTION FACTOR(REP)
-001REP	J16W87	Silver, Total	50.0	u	50.0	u	NC	1.0
		Aluminum, Total	2000	u	2000	u	NC	1.0
		Arsenic, Total	250	u	250	u	NC	1.0
		Barium, Total	135		134		0.74	1.0
		Beryllium, Total	25.0	u	25.0	u	NC	1.0
		Calcium, Total	46700		48000		2.7	1.0
		Cadmium, Total	25.0	u	25.0	u	NC	1.0
		Cobalt, Total	100	u	100	u	NC	1.0
		Chromium, Total	1560		928		50.8	1.0
		Copper, Total	100	u	100	u	NC	1.0
		Iron, Total	7240		2350		101.8	1.0
		Potassium, Total	141000		160000		12.9	1.0
		Magnesium, Total	14100		14200		0.59	1.0
		Manganese, Total	91.0		86.0		5.6	1.0
		Sodium, Total	45700		49000		7.0	1.0
		Nickel, Total	100	u	100	u	NC	1.0
		Lead, Total	150	u	150	u	NC	1.0
		Antimony, Total	150	u	150	u	NC	1.0
		Selenium, Total	300	u	300	u	NC	1.0
		Thallium, Total	300	u	300	u	NC	1.0
		Vanadium, Total	70.0	u	70.0	u	NC	1.0
		Zinc, Total	726		726		0.069	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/12/08

CLIENT: TNU-HANFORD RC-057 LVL LOT #: 0806L248

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0225-LC1	Silver, LCS	501	500	UG/L	100.2
		Aluminum, LCS	5230	5000	UG/L	104.6
		Arsenic, LCS	9990	10000	UG/L	99.9
		Barium, LCS	5040	5000	UG/L	100.7
		Beryllium, LCS	253	250	UG/L	101.2
		Calcium, LCS	25900	25000	UG/L	103.8
		Cadmium, LCS	251	250	UG/L	100.3
		Cobalt, LCS	2520	2500	UG/L	100.6
		Chromium, LCS	512	500	UG/L	102.4
		Copper, LCS	1250	1250	UG/L	100
		Iron, LCS	5020	5000	UG/L	100.5
		Potassium, LCS	24800	25000	UG/L	99.1
		Magnesium, LCS	25500	25000	UG/L	102.0
		Manganese, LCS	761	750	UG/L	101.4
		Sodium, LCS	26000	25000	UG/L	103.9
		Nickel, LCS	2020	2000	UG/L	101.1
		Lead, LCS	2510	2500	UG/L	100.4
		Antimony, LCS	2950	3000	UG/L	98.3
		Selenium, LCS	10000	10000	UG/L	100.1
		Thallium, LCS	9950	10000	UG/L	99.5
		Vanadium, LCS	2470	2500	UG/L	98.8
		Zinc, LCS	1010	1000	UG/L	100.8

SAMPLE DIGESTION RECORD

5 I.E. TMW 6/9/08

Digestion Batch #: 08L0224
Date/Time Initiated: 6/9/08 1045
Date/Time Completed: 6/9/08 1630
Analyst(s): TMW
Matrix: Soil Water Other:
Instr. Type: AA CP
Parameters: HSL

Digested / Undigested (circle one)
Balance #: N/A
Balance Cal Verif: Y NA
Hot Plate Temp: 93°

SOP: L-SPI-3020 Rev. 00

Method: (circle)				
SW	3005A	DW	200.7 (1994)
	3010A		200.9
	3015		3113B
	3020A		
	7060A (As/Se)	MCAWW	200.7 (1982)
	7760A (Ag)		200 (AA)
			206.2 (As/Se)
	3050B		
	3051	SM	3030C (NC)
CLP	ILMO3.0	Other	Tyflon
	ILMO4.0		

TMW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0806L247-001		100ml	100ml	~7	TO	N/A	stained brown H_2O		
001R		↓	↓	↓	↓	↓	↓		
001S	1.0ml	↓	↓	↓	↓	↓	↓		
0806L248-001		2.0ml	↓	↓	↓	↓	↓		
001R		↓	↓	↓	↓	↓	↓		
001S	1.0ml	↓	↓	↓	↓	↓	↓		
08L0224-MB1		100ml	↓			↓	clear/colorless		
LC1	1.0ml	↓	↓				↓		

TMW 6/9/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL G05039
H_2O_2
1:1 HNO_3
1:1 HCL

File ID#: IC022501
LIMS Transfer: Y N updated
Data Review By/Date: PMP, 06/10/08

nville Laboratory Use Only

)806L248

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000015

nt TNU HANFORD RC-057

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager O. JOHNSON

SW846 Del STO TAT 3 day

Rec'd 6-5-08 Date Due 6-8-08

Refrigerator #																							
#/Type Container	Liquid																						
	Solid																						
Volume																							
Preservatives																							
ANALYSES REQUESTED →		ORGANIC																					
		VOA	BNA	Pest/PCB	Herb																		

A 2 1C 20 PH Flash Ring

RIX ES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum, Solids, Drum, Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only															
	001	J16W87	✓	✓	W	5/28/08	1255																

cial Instructions:

Met① = HSL NOHG

Special Instructions:

1. Limited Volume per Client cancel IFLASH
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	6/8/08	1005

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-057-004	Page ~~1 of 1~~ m 6/9/08
llector Rory Seffler	Company Contact Doug Bowers Telephone No. 521-0707	Project Coordinator KESSNER, JH	Price Code 3 C Data Turnaround ~~24 Hours~~ 7 day 6-9-08
oject Designation 118-K-1 Burial Grounds - Other Liquid Quick Turn	Sampling Location 118-K-1	SAF No. RC-057	
Chest No. AFS-04-122	Field Logbook No. EL 1602-4 COA R118K12600	Method of Shipment ~~Gov vehicle~~ Fed Ex	
ipped To ~~RCF~~ 6-9-08 ~~Radiological Counting Facility~~ Lionville	Offsite Property No. A080289	Bill of Lading/Air Bill No. See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None											
Type of Container	G											
No. of Container(s)	1											
Volume	20mL											
SAMPLE ANALYSIS	~~RCF GEA Shipping Screen~~ See below											

Sample No.	Matrix *	Sample Date	Sample Time										
6W87	OTHER LIQUID	5-29-08	1255	X									

CHAIN OF POSSESSION	Sign/Print Names		
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
OCO IC	6-4-08 0800	JR DeBuigne JR DeBuigne	6-4-08 0800
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JR DeBuigne JR DeBuigne	6-4-08 0800	Fed Ex	
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	6-5-08 1005	[illegible]	6-5-08 1005
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Run Icp metals
pH
Flash point

RTC

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

:H-EE-011

000000016

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-057-004 | Page 1 of 2

Collector: Rory Seffler	Company Contact: Doug Bowers	Telephone No.: 521-0707	Project Coordinator: KESSNER, JH
Project Designation: 118-K-1 Burial Grounds - Other Liquid Quick Turn	Sampling Location: 118-K-1		SAF No.: RC-057
Ice Chest No.: ERC-97-079	Field Logbook No.: EL 1602-4	COA: R118K12600	Method of Shipment: Gov vehicle
Shipped To: Radiological Counting Facility	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

Price Code

Data Turnaround: MD 6/3/08 **24 Hours**

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None		None								
Type of Container	G		G								
No. of Container(s)	1		1								
Volume	20mL		20ml								
SAMPLE ANALYSIS	RCF GEA Shipping Screen		see below								

Sample No.	Matrix *	Sample Date	Sample Time										
J16W87	OTHER LIQUID	5-28-08	1255	X	19743			20ml					

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RZ Steffler R.Z. Steffler	1500 5-28-08	Doug Bowers/Doug Bowers	5-28-08/1500
Doug Bowers/Doug Bowers	5-29-08/1740	Ref 1A 1060 bldg	5-28-08/1740
Ref 1A / 1060	5-29-08 0820	JRDeBrigue JRDB	5-29-08 0820
JRDeBrigue JRDB	5-29-08 0845	K. Eliason / K. Eliason	5-29-08 0845
Ref D. Miller / D. Miller	1010 6-2-08	MJ Stankovich	1010 JUN 02 2008
MJ Stankovich	1500 JUN 03 2008	1060/IC	1500 JUN 03 2008
1060/IC	6-4-08 1060 IC	JRDeBrigue JRDB	6-4-08 0800

SPECIAL INSTRUCTIONS

Rad Screen

This sample will be fowarded to Eberline/RECRA Run ICP metals pH Flash point

10 mls liquid

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: 6-4-08 1060 IC — Title: JRDeBrigue JRDB — Date/Time: 6-4-08 0800

FINAL SAMPLE DISPOSITION — Disposal Method: Transhipped to Lionville using COC 2 of 2 — Disposed By: JRDB JRDeBrigue — Date/Time: 6-4-08 0800

WCH-EE-011

000000017

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-057

Date: 6/5/08

LvLI Batch #: 08061248

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7989 5488 4122
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.5	°C	Cooler # AFS-0422
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☑ No PH	
Short holds taken to wet lab?	☑ Yes	☐ No	☐ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI

Limited Volume